Meeting the Information Needs for Surface Transportation Security and Reliability

NATMEC 2002
May 14, 2002

Jeffrey F. Paniati
Program Manager
ITS Joint Program Office
U.S. Department of Transportation

Presentation Outline

- Demand for Real-time Information
- Need for National Investment
- Vision for a National Infostructure

Demand for Real-Time Information

- Special Events
- Hurricane Evacuation
- Severe Weather Events
- Major Incidents
- Daily Commute
- September 11

Need for National Investment

- Need National Investment in Highway and Transit System Monitoring That Will:
  - Improve Security of Surface Transportation System
  - Address Growing Congestion Problem
  - Support Improved Response to Weather Events
  - Facilitate National and Regional Traveler Information
- Focus Should Be on Supporting Both Local and National Interests
- Approach Should Foster Public/Private Partnerships and Innovative Approaches

Security Management

Opportunities

- Monitoring Critical Infrastructure
- Supporting Evacuation and Response
- Providing Traveler Information
- Supporting Long Term Operations

Existing Infrastructure

- Transportation Systems Currently Not Monitored for Security
- Limited Highway Surveillance Designed for Traffic Incident Detection and Signal Operations
- Transit Monitoring - AVL and Some Video
- Limited Transportation and Emergency Management Integration

Security Management Information Needs

- Reporting of Disruptions on Key Facilities Nationwide
- Monitoring of Traffic and Transit Operations in Major Metropolitan Areas
- Surveillance of Critical Infrastructure
- Surveillance of Other Locally Determined Facilities
- Sharing of Information

Congestion Management

Opportunities

- Managing Traffic
- Responding to Incidents
- Managing Construction
- Providing Traveler Information

Existing Infrastructure

- <25% of Urban Freeways Under Surveillance
- Little Arterial Surveillance
- Only a Third of Our Largest Transit Systems Have Deployed AVL

Congestion Management Information Needs

- Reporting of Capacity Restricting Events (Accidents, Incidents, Weather, Construction) Nationwide
- Monitoring of Traffic and Transit Conditions in Major Metropolitan Areas
- Monitoring of Weather and Pavement Conditions in Major Metropolitan Areas
- Monitoring of Other Locally Determined Facilities
  - Smaller Metro Areas
  - Key Interstate Links
  - Special Event Facilities

Weather Management

Opportunities

- Supporting Hurricane Evacuation
- Providing Fog Detection and Warning
- Improving Ice and Snow Management
- Providing Traveler Information

Existing Infrastructure

- Regional Forecast From the Weather Service
- One Road Weather Station per 133 NHS Miles
- Isolated Fog Detection
- No Real Evacuation Route Monitoring

Weather Management Information Needs

- Improved Nationwide Forecasting
- Monitoring of Other Locally Determined Facilities
  - Snow and Ice Routes
  - Hurricane Evacuation Routes
  - Fog-Prone Areas

Traveler Information

Opportunities

- Support
  - Safety
  - Security
  - Mobility
- Improve Traveler Reliability
- Connect With Customers
- Build Base for Private Sector Business

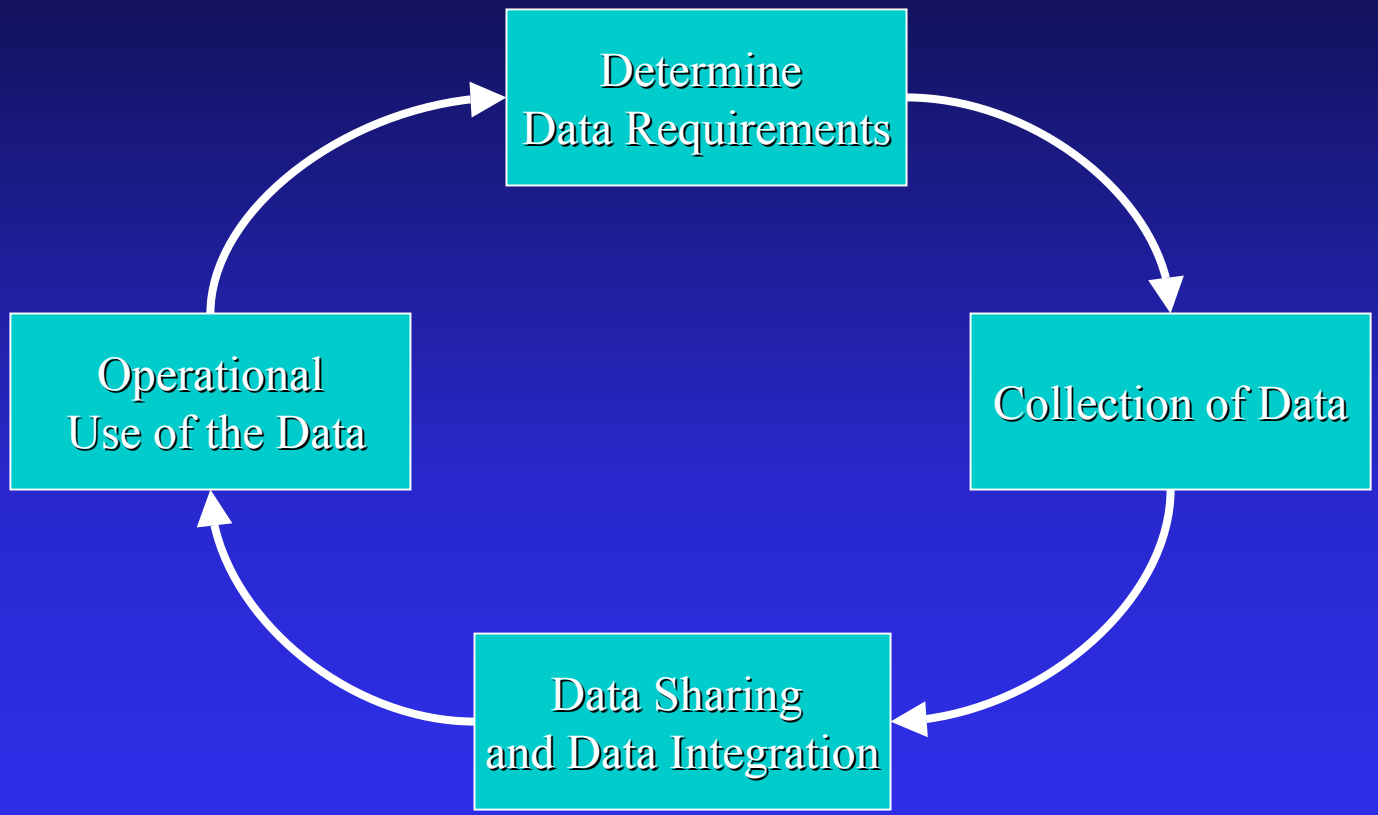
Existing Infrastructure

- >300 Phone Services and 200 Traveler Information Websites
- 511 Beginning To Be Deployed Across U.S.
- Most Large Metropolitan Areas Have Some Sort of Private Information Services
- Information Is Limited Due to Limited Coverage/data

Traveler Information Needs

- Travel Times or Travel Speeds on Key Highway Links
- Incident Location and Duration on All Highways
- Weather and Road Condition Information on All Highways
- Arrival Times of Transit Vehicles and Status of Stations

“Infostructure” Vision



National Transportation Infostructure

- Statewide Reporting of Constrictions On The NHS
- Monitoring of Freeways, Arterials And Transit Systems in Metropolitan Areas Over 1 Million Population
- Surveillance of Key Infrastructure Facilities

Local Transportation Infostructure

- The Infostructure Program Would Provide Funding for the Deployment of Systems to Support Local Transportation Management Needs, such as
  - Traffic Management
  - Transit Management
  - CVISN
  - Incident/ Emergency Management
  - Regional Traveler Information
  - Evacuation Route Monitoring
  - Statewide Weather/road Condition Monitoring
  - Construction Management

Proposed Approach

- Establish a Federal Program to Accelerate Infostructure Deployment That Includes:
  - Research on information needs, uses,benefits, collection and storage methods, etc.
  - Guidance and technical assistance to facilitate improved data collection and use
  - A major field test to demonstrate the potential of improved information
  - Funding for deployment

Issues

- Cost
- Role Of Private Sector
- Integration – Standards
- Access to Data
- And More . . . .

Conclusion

INFOstructure – “The Electronic Interstate”